1.Draw the translation of the triangle *HOT* six units left and one unit down. Label the

**Transformations: Translations and Reflections** Name:

image *H’O’T’*.

****

2. Find the translation of the quadrilateral *WXYZ* under the rule:

.

****

Use the grid below to answer questions 3 through 5.



3. Find the rule to describe the translation from point *A* to point *B*.

4. Find the rule to describe the translation from point *C* to point *D*.

5. Find the rule to describe the translation from point *E* to point *A*.

6. Find the rule to describe the translation from point *D* to point *A*.

7. Find the rule to describe the translation from point *C* to point *B*.

8. Quadrilateral *PQRS* is plotted on the grid below.

a) On the graph, draw the translation of polygon *PQRS* three units to the left and four units down. Label the image *P’Q’R’S’*.



b) Now create polygon *P”Q”R”S”* by translating polygon *P’Q’R’S’* using the rule . What will be the coordinates of point *Q”*?

c) Write a single translation rule from polygon *PQRS* to polygon *P”Q”R”S”*.

9. Find and draw the reflection of the triangle *HOT* over the *x-axis*.

****

10. Find the reflection of the quadrilateral *WXYZ* across the dotted line.



a) What is the equation of the dotted line?

b) Label the image *W’ X’ Y’ Z’*.

c) Describe how you actually found the reflection.

11. Triangle *XYZ* has vertices *X* (2, 1), *Y* (6,1), and *Z* (4, 4).

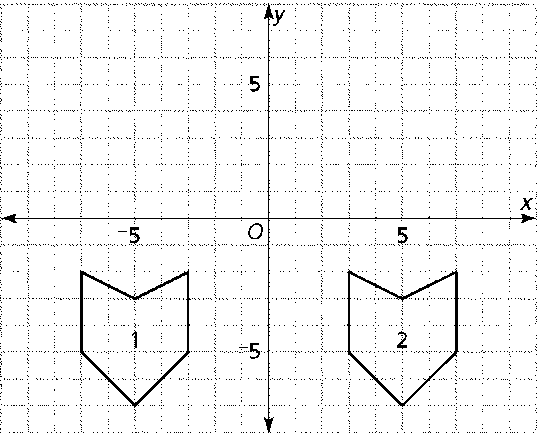
a) On the graph, draw the image of triangle *XYZ* after a translation two units to the left. Label the image *X’Y’Z’*.

b) Now create triangle *X”Y”Z”* by reflecting triangle *X’Y’Z’* over the *x-*axis. Draw it above.

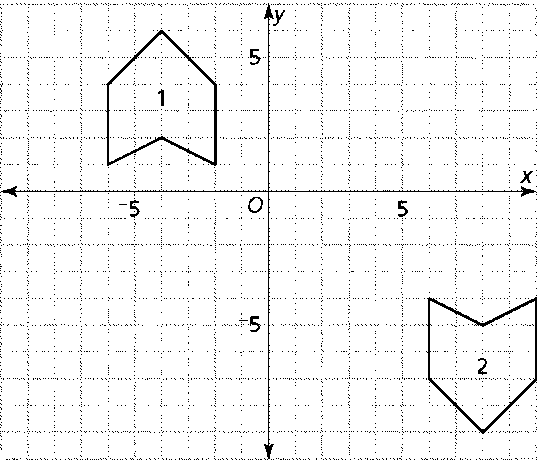
What will be the coordinates of triangle *X”Y”Z”* ?

c) Write a single rule that would tell us how to go from XYZ -> X”Y”Z”.

12. Describe a reflection that would move shape 1 to match shape 2.



13. Refer to the grid below:



a) Describe how you could move shape 1 to exactly match shape 2 by using one translation and one reflection.

b) Describe, if possible, 1 or 2 other sequences of transformations that would move shape 1 to exactly match shape 2.